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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:
HSRL-6J

Friday, 15 April 1994

Mr. Ted Valerio, P.E.
U.S. Army Corps of Engineers
Buffalo District
CENCB-PE-PT
1776 Niagara Street
Buffalo, N.Y. 14207-3199

Re: **Review of the Statement of Work (SOW) Phase II - Field Sampling And Analysis at Wisconsin Steel Works Site (WSW) in Chicago, Illinois.**

Dear Mr. Valerio:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA), Section 309 of the Clean Air Act and Executive Order 12088, the U.S. EPA, and our contractor, WW Engineering & Science (WWES) have reviewed the above referenced document for the Wisconsin Steel Works Site, Chicago, Illinois. This document provides guidance for Phase II activities to be conducted in the summer of 1994 at the Wisconsin Steel Works (WSW) site. These activities are intended to supply additional information on contaminant levels and better delineate contaminant distribution on the site.

In general, the SOW includes many of the additional recommendations for investigative work made in our 1 November 1993 letter; including:

- Stratigraphic investigation of geologic units beneath the Wadsworth Till via deep soil borings;
- Characterization of the Wadsworth Till as an aquitard via permeability tests of undisturbed soil samples;
- Investigation of contamination beneath the Wadsworth Till, including the installation of deep monitoring wells for sampling of ground water within the Lemont Till;
- Investigation of effluent water and sediments from the site's existing utility conduits;
- Investigation of light non-aqueous phase liquids (LNAPLs) via the installation of shallow water table monitoring wells.

In an effort to assist the U.S. Army Corps of Engineers as this plan for the Phase II field work is being developed, we recommend that the enclosed comments also be considered.

Thank you for the opportunity to provide comments on the ***Statement of Work (SOW) Phase II - Field Sampling And Analysis***. If you have any questions, please contact me: (312) 886-0850.

Sincerely,

Laura J. Ripley

Laura J. Ripley
Federal Facilities Project Manager

Enclosure

cc: Eric Runkel, IEPA
Ted Lietzke, WWES

U.S EPA - Region V
TECHNICAL REVIEW OF STATEMENT OF WORK FOR PHASE II FIELD SAMPLING AND ANALYSIS
WISCONSIN STEEL WORKS SITE
CHICAGO, ILLINOIS
FEBRUARY 1994

General Comments:

- A technical meeting conducted with members of the Corps, the U.S. EPA, and the IEPA on December 8, 1993, included a discussion on the characterization of waste as hazardous or non-hazardous. The meeting also included discussion on appropriate protocols for analysis and disposal of these materials. The SOW does not address the issue of hazardous or special waste. The task of waste characterization may be planned by the Corps to be handled separately. However, the current SOW should acknowledge the issues of waste handling and analysis protocols.

- No discussion of previously-existing on-site water wells was included in the Sampling Plan. Field verification of previously-existing water wells on the WSW site is recommended. Additionally, supplemental information from on-site and off-site water well logs may be available via a records search and would greatly increase understanding of the site's potential off-site impact.

- A geophysical investigation should be considered to delineate the old North Slip as well as to determine the depth of the three slips' sheet pilings. Such an investigation could be incorporated into the upcoming field work.

- No soil borings or monitoring wells appear to have been placed in the vicinity of the steel "pickling" area (acid bath to strip steel prior to plating); the pickling area was approximately 500 feet northeast of the guard house on 106th Street. Has this possible caustic acid contamination been considered as an area of environmental concern? U.S. EPA recommends that this area be investigated during the upcoming field work.

- Although the Sampling Plan proposes that seven new water table monitoring wells be completed on the site, U.S. EPA recommends that 12 new water table monitoring wells be installed. In particular, we recommend that three wells be placed in the Coke Plant area rather than one; one water table well should be placed adjacent to MW-16B (unless existing MW-16 can be documented as intersecting the Carmi Sand's water table) and one water table well should be placed adjacent to MW-28 (unless existing MW-11 can be documented as intersecting the Carmi Sand's water table). An additional water table well should also be placed adjacent to SB-17 in the slag area.

  Proposed monitoring wells MW-31A and MW-32A appear to be located very close to previously-installed MW-5 and MW-19 where free-floating product is suspected. We

recommend that in addition to MW-31A a water table well be placed very near MW-19 and a second well be placed to the east toward SB-01. These additional wells will provide better local hydraulic information and will be useful in determining the potential extent of any light non-aqueous phase liquids (LNAPLs). Well MW-32A should be installed within 25 feet of MW-05 to assess the potential for LNAPLs.

- U.S. EPA requests that the SOP for the investigation of units beneath the Wadsworth Till be submitted for review before the investigation commences. Our chief concern regarding the sampling and analysis of these deeper geologic units is the possibility of cross-contamination via the bore-hole conduit. If contamination is observed in the surficial units, then double-casing of the deeper monitoring wells, or its equivalent, may be necessary to prevent such cross-contamination.

- Although sampling of dense non-aqueous phase liquids (DNAPLs) has been proposed for the upcoming Phase II field work, no definitive plan has been presented within this Sampling Plan for DNAPL delineation. Such a pre-determined plan or approach is strongly recommended, especially for the Coke Plant area.

- Although sampling of metals has been proposed for the upcoming Phase II field work, consideration should be given to sampling the full metal scan of the Target Analyte List for a percentage of the samples.

- A global check for typographical errors should be made.

Specific Comments:

SECTION 2.0 TASK DESCRIPTIONS

TASK 1.0 - ADDITIONAL WELL INSTALLATIONS

Page 2-1, 1st Complete Paragraph - The SOW needs to specifically identify screen placement for the deep monitoring wells which are currently listed as being "at the top of bedrock." If ground water is not observed on the "top of bedrock," then the deep wells should be set in the lowest perched zone below the Wadsworth Till. The borings for these wells should penetrate into bedrock to determine depth and condition of bedrock surface (lithology, fracture, etc.).

Page 2-1, 2nd Complete Paragraph - Although 10 deep monitoring wells are listed, only nine are identified on Table 2-1 and Figure 2-1. Although eight water table monitoring wells are listed, only seven are identified on Table 2-1 and Figure 2-1.

Page 2-1, 4th Complete Paragraph - By "in-place" well, do you mean an existing monitoring well?

Page 2-8, 1st Complete Paragraph - The Wadsworth Till is listed as possibly being sampled for contaminant concentrations. U.S. EPA recommends that units beneath this till aquitard be sampled, rather that the aquitard itself. We also recommend that fill and sand samples be selected based on the **highest** visual or instrument indication of contamination.

Page 2-8, 2nd Complete Paragraph - U.S. EPA recommends that fill and sand samples be selected based on the **highest** visual or instrument indication of contamination.

Page 2-8, 3rd Complete Paragraph - U.S. EPA also recommends that a third Shelby Tube sample be collected for permeability tests from the Wadsworth Till (MW-31B) within the Coke Plant area.

TASK 2.0 - MONITORING WELL SAMPLING

Page 2-8, 5th Complete Paragraph - Although elevation measurements are listed within the Sampling Plan with a precision of 0.1 inch, we recommend that the precision be 0.01 feet. (Both units are similar, but the industry standard is 0.01 feet.)

Depending on the depth to ground water within the deep monitoring wells, hand-bailing of the wells may be a relatively difficult task. The Corps may wish to consider alternative sampling methods.

Page 2-11, 5th Purging Procedure - What is meant by "but fast enough that the recharging water will not cascade down the inside of the casing"?

TASK 3.0 - HOT SPOT DEMARCATION AND SAMPLING

Page 2-11, 7th Complete Paragraph - A significant range of investigation methods is left open to the Contractor's discretion during the field work for the hot spot demarcation and sampling. However, none of the methods listed is described in sufficient detail to provide technical comments. Please provide such detail.

Page 2-11, 9th Complete Paragraph - QA/QC samples are necessary to validate data accuracy. If, however, the hot spot demarcation is considered a qualitative rather than quantitative investigation, then data validation may not be necessary. U.S. EPA recommends that standard QA/QC protocol be followed.

Page 2-11, Last Paragraph - Although the investigation of "hot spots" is designed to characterize contamination within the unsaturated zone above the Carmi Sand Aquifer and the aquifer, itself, the Wadsworth Till must be partially penetrated to determine the existence of DNAPLs. Hence, borings may terminate in the till unit.

Page 2-19, Table 2-7 - TPH and BTEX analysis should also be completed in the vicinity of the discarded tanks in the Slag Area.

TASK 4.0 - OPTIONAL BACKGROUND SAMPLING

Page 2-12, 3rd Complete Paragraph - Although Figure 2-4 is referenced as illustrating candidate locations for background sampling, the figure only includes a topographic map with no specifically-marked areas. Please propose specific locations.

TASK 5.0 - SAMPLING OF UTILITY CONDUITS

Page 2-12, 6th Complete Paragraph - Although Figure 2-5 illustrates the locations of storm basins, outfalls, and manholes, a 1928 Plat Map of the WSW water piping, sewers, etc., indicates that at least 4 and possibly 5 outfall locations may have been missed. Based on the Plat Map an outfall exists between A-10 and A-5 (the outfall was a previous "pump house" intake, so it may be submerged), another appears to exist north of A-11 (the outfall was another previous intake, so it may be submerged), two outfalls appear to exist south of A-11, and another may exist along the North Slip, directly north of the former "tar storage" tank within the coke plant area.

Page 2-12, 8th Complete Paragraph - The proposed tracer study may provide valuable information regarding the "short-cutting" effects of the utility conduits on ground water flow within the Carmi Sand. A copy of the tracer plan should be made available for regulatory technical review before implementation.

Page 2-21, Entire Page - The text of this page is identical to the bottom of page 2-12, except for the QA/QC requirements, which have been deleted. This page may be omitted from the Sampling Plan.

TASK 6.0 - DEEP CORE SAMPLING AND ANALYSIS

Page 2-26, 3rd Complete Paragraph - What sampling method will be used to collect river and slip sediment? Collecting representative samples can be difficult at times. We suggest that the Corps provide more guidance to the contractor on this task.

Page 2-26, 4th Complete Paragraph - Although OVA or HNU field screening is applicable to petroleum and other hydrocarbon-related contaminants, the majority of the contaminants anticipated in the river and slip sediments are metals, semi-volatile organic compounds (such as PAHs), and perhaps cyanide. Alternative field-screening methods should be investigated.

TASK 7.0 - ADDITIONAL TCLP TESTING

Page 2-26, 5th Complete Paragraph - Although 3 sample locations are indicated in the text of this paragraph, Figure 2-8 illustrates only 2 sampling locations. Please revise the figure. (The figure is very difficult to read at its present scale.)

How will the weathered and the unweathered slag be distinguished?

Page 2-31, Table 2-13 - This table should specify units (ie., mg/L).

TASK 8.0 - PUMPING TESTS

Page 2-32, 1st Complete Paragraph - The first sentence is missing an object. "Two wells shall be constructed in..." what?

The pumping and observation wells proposed in this section (Task 8) should also be referenced in the Task 1 well installation section, as well as illustrated on Figure 2-1b.

Typically, an effective pump test requires the existence of a monitoring well within 5 to 10 feet of the pumping well, in addition to monitoring wells at greater distances (such as 50 feet).

Will the pumping wells be used as monitoring wells after the pump tests are completed? (The referenced ASTM guidance is designed for monitoring wells rather than standard recovery wells.)

Page 2-35, 1st Complete Paragraph - Will all water pumped from the wells be containerized, sampled, analyzed, and disposed of properly? Will the storage drums or tanks also be properly labeled?

Page 2-35, Last Paragraph - The last line of this page (2-35) does not correspond with the first line of the next page (2-36).

SECTION 5.0 QUALITY ASSURANCE PROJECT PLAN (QAPP)

Page 5-1, Contents within the QAPP - Please add the following:

- sensitivity as a quality assurance objective to Item 2;
- final evidence file custody procedure to Item 4;
- field screening analytical protocol to Item 7.